

## SORBENT AND CATALYST PREPARATION FACILITIES

### CONTACT POINTS

**Ranjani Siriwardane**

Senior Scientist

304-285-4513

ranjani.siriwardane@netl.doe.gov

**Diane (DeeDee) Newlon**

Technology Transfer Manager

304-285-4086

r diane.newlon@netl.doe.gov

### ADDRESS

**National Energy  
Technology Laboratory**

3610 Collins Ferry Road

P.O. Box 880

Morgantown, WV 26507-0880

304-285-4469 fax

626 Cochran's Mill Road

P.O. Box 10940

Pittsburgh, PA 15236-0940

412-386-4604 fax

### WEBSITE

[www.netl.doe.gov/products/r&d/](http://www.netl.doe.gov/products/r&d/)

### Capabilities

The National Energy Technology Laboratory (NETL) has facilities for the small scale preparation of sorbents/catalysts suitable for fixed, moving and fluid bed reactor applications. Equipment is also available for ASTM attrition tests, crush measurements and particle size analysis.

#### Mixer Pelletizer

- Mixing of different solid powders
- Agglomeration of solid materials for the preparation of pellets with 1-6 mm diameter, suitable for fixed bed reactor tests.
- 5 lbs batch production

#### Rotary Vacuum Evaporator

- Wet impregnation of porous substrates
- Batch production up to 2 lbs
- Particle size up to 1 cm in diameter

#### Lab-Scale Spray Dryer

- Semi-continuous production up to 1 lbs
- Particle sizes range from 40 to 100 microns in diameter
- Suitable for transport/fluid bed reactor applications

#### Dome Extruder

- Continuous production up to 15 lbs
- Particle sizes range from 0.5 mm to 5 mm in diameter
- Extrudates suitable for fixed bed reactor applications

#### Particle Spheronizer/Marumerizer

- Semi-continuous production up to 15 lbs
- Particle sizes range from 0.5 mm to 6 mm in diameter
- Transforms pellets into spherical shape



## SORBENT AND CATALYST PREPARATION FACILITIES

### Attrition Tester for Materials Suitable for Fluid Bed/ Transport Reactor Applications

- Standard Test Method for Determination of Attrition and Abrasion of Powdered Catalysts by Air Jets - ASTM D 5757-95
- Suitable for particles with sizes less than 500 microns

### Attrition Tester for Materials Suitable for Moving/ Fixed Bed Reactor Applications

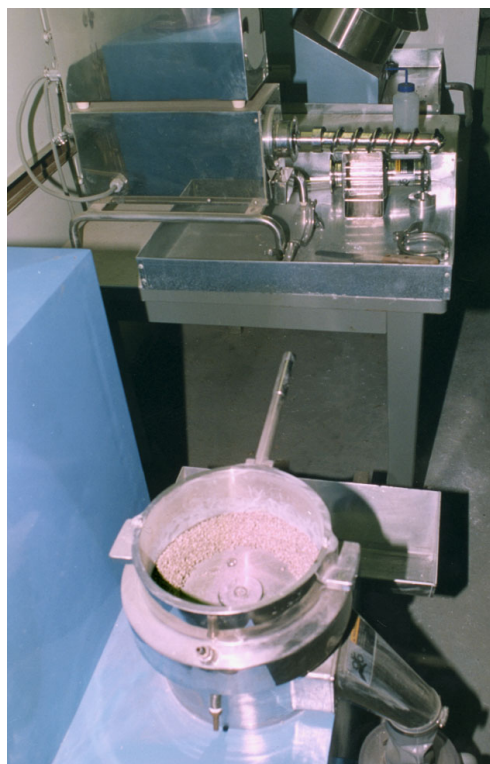
- Standard Test Method for Attrition and Abrasion of Catalysts and Catalyst Carriers - ASTM D 4058-92
- Suitable for particle sizes greater than 1 mm

### Crush Strength Measurements

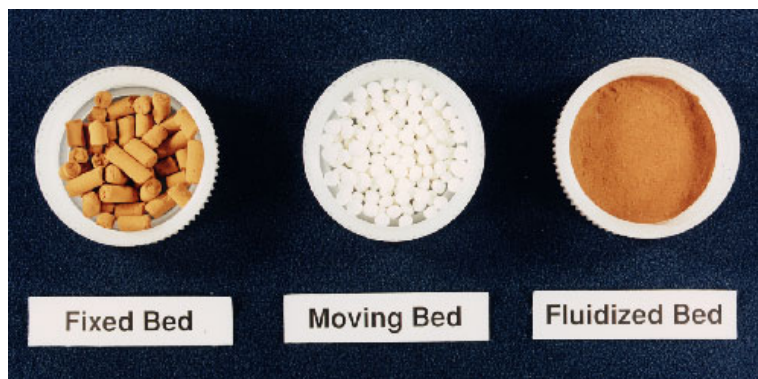
- Measurement of force necessary to break pellets using a push-pull gauge
- Suitable for mechanical strength measurements for materials used in fixed/moving bed reactor applications

### Particle Size Analysis

- ASTM sieves for particles larger than 300 microns
- Coulter counter for water insoluble particles smaller than 300 microns
- API aerosizer for water soluble particles smaller than 300 microns



*Sorbent/Catalyst  
Preparation Facilities*



*Sorbents*